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ABSTRACT

Michael's Informal Test of Student Ability (MITOSA) is a diagnostic evaluative tool for adult students designed to test nine skills abilities in adult students functioning below a tenth grade level. The nine test sections are approximate reading level, understanding of basic math concepts and symbols, general thinking/reasoning ability, eye-hand motor coordination and visual motor integration, discrimination (visual), figure-ground perception, closure, auditory perception and sequential memory, and written language. Teachers, counselors, or others in the field of adult education can use the assessment guide and reach satisfactory conclusions regarding a student's entry level in reading and writing. Evaluators with some background in diagnostic testing and/or learning disabilities can derive further information from MITOSA results pertaining to a student's learning style. (This tester's manual contains the test items and directions for administering, scoring, and interpreting.) (MN)

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MICHAEL'S INFORMAL TEST OF STUDENT ABILITY

(M.I.T.O.S.A.)

TESTER'S MANUAL

CE 028588

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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INSTRUCTIONS FOR ADMINISTERING MITOSA

(Michael's Informal Test Of Student Ability)

by

Thomas Michael Grafius

INSTRUCTIONS FOR ADMINISTERING MITOSA

Introduction

MITOSA (Michael's Informal Test Of Student Ability) has been designed to be used as a diagnostic evaluative tool for adult students. The test can be given by classroom teachers, by counselors, or by teacher aides when these instructions are used as a guide.

Assessment of test results is not intended to be a mystery. Teachers, counselors, or others in the field of adult education can use the assessment guide and reach satisfactory conclusions regarding a student's entry level in reading and writing. In order to derive further information from MITOSA results, specifically that pertaining to a student's learning style, the evaluator should have some background in diagnostic testing, learning disabilities, or both.

MITOSA can be used with any adult student who is functioning below a tenth-grade level. Various sections of the test measure the following skills or abilities:

Page I: Approximate reading level

Page II: Understanding of basic math concepts and symbols

Page III: General thinking/reasoning ability

Page IV: Eye-hand motor coordination and visual motor integration

Page V: Discrimination (visual)

Page VI: Figure-ground perception

Page VII: Clozure

Page VIII: Auditory perception and sequential memory

Page IX: Written language

The person administering the test will read aloud the sections labeled To The Student while the student(s) listen and refer to their own copy of the test. Instructions on the test pages are to be read by the student if this is possible. If it is not possible, the teacher may read just those instructions.on the test page. Do not add any explanations. The purpose of MITOSA is to find out what the student already knows or can figure out.

Before administering MITOSA, remove the last two pages of the test packet and place them in front of you. These will be pages VIII and X, Auditory Perception and the Word List Check Sheet. MITOSA should take about 50 minutes to administer.

I. WORD LISTS

To the student:

"The purpose of this part of MITOSA is to find out how many words you know by sight. The results will help us choose the proper books or materials for you. Read the word lists from top to bottom as they are uncovered. If If you don't know a word at all, say Pass, but if you think you know it, say it. Even a wrong answer can be helpful."

To the tester:

Sit across the desk or table from the student taking the test. Place the Word List Check Sheet and a copy of the Word List in front of you. Cover all of the word lists on the student's test except List A. Use two overlapped sheets of blank paper.. Tell the student to begin. As the student reads the words from the lists, indicate his/her response on the check sheet in the following manner: C if the word was read correctly; P if the student said pass; write down the actual response if the word was read incorrectly.

When the student is finished with List A, slide one sheet of paper down to expose List B, then List C, etc.. You may stop this part of the test at the end of the first list on which the student misses two or more words. The Assessment Guide will tell you how to interpret the results. If you think the student should be able to go further in the Word Lists, have him/her continue, unless you see signs of frustration. Keep in mind that this section of MITOSA is only supposed to indicate the highest comfortable reading level of the student.

II. MATH CONCEPTS AND SYMBOLS

To the student:

"This page has 16 math sentences or problems on it. Some use numbers and others use symbols. Look carefully at the numbers or symbols and the math signs with them and decide if they show something that is true or not true. If the sentence is true, put a T in the answer space. If the sentence is false, put an F in the answer space.

To the tester:

Make sure the student is turned to Page II of the test and has a sharpened pencil. If he/she asks specific questions about test items, tell the student that you cannot answer. You may repeat all or part of the instructions, however. Do not use the words equals, plus, minus, etc. This test is supposed to tell you which math symbols and concepts the student is already familiar with; it not a test of computational ability.

Be aware of students' behaviors as they take this test. Note on a sheet of paper any indications that the student might be having difficulty seeing or understanding any of the test items. Look for signs such as: 1. twisting the paper back and forth; 2. squinting at the paper or keeping the face very close to it; erasing many times; tracing over parts of the test with a pencil or finger. Any out-of-the-ordinary behavior that you note could be pertinent for the final assessment.

When the student is finished, say, "Put your pencil and turn to the next page." You do likewise.

III. GENERAL THINKING AND REASONING ABILITY

To the student:

"This section of MITOSA contains some puzzles and riddles. Solve or answer each item that you can. Follow the directions exactly. Your answers will give us an idea of how well you can figure out problems on your own. This will help us decide which materials to have you work from.

1. Circle the word TRUE or FALSE, depending on what you think the lines and symbols show.
2. On the blank line write in the best word you can think of to complete this sentence.
3. The first row shows lines that go together to form a shape or a design. What design would the lines in the second row make? Draw the design in the space at the right.
4. Read or listen to the directions, then do exactly as they say. There is more than one correct answer for each item. Use a pencil.
5. On the blank line at the right fill in the word that you think best answers the riddle.
6. Follow the directions given on the test. Work quickly but carefully. You have five minutes to complete this part. Use each letter only as many times as it is found in the key word."

To the tester:

Give the student a reasonable amount of time to answer each item, but if the student seems to be stuck or is becoming frustrated, move on to the next question. Be encouraging and accepting of the answers the student gives whether they are correct or not. Do not give clues beyond those in the directions and in the notes "To the student". Keep a record of any excessive erasing the student might do as well as any times the student has to trace designs on the test or turn the test page around in an attempt to figure out an answer.

IV. EYE-HAND MOTOR COORDINATION

To the student:

"This exercise will tell us how well your eyes and your hand work together. This is one of the skills you use when you write. Beginning at the left end of the lines in Part A, draw a continuous line between the heavy lines on the test paper. Draw the line all the way to the right end of the double lines without lifting the pencil point or going outside the heavy lines. Take your time. Once you start, do not move the paper."

To the tester:

The instructions to the student are self-explanatory, but there are certain things you need to watch out for. If the student has to move the paper in order to complete the line, note the fact and consider the answer incorrect. Do the same if the student raises his/her pencil point from the paper, then resumes the line. If, however, the student shifts his/her hand on the paper without lifting the pencil or moving the paper, the response is ok.

IV. B, C, D. VISUAL MOTOR INTEGRATION

To the student:

"This section of MITOSA checks the same abilities you use when you copy information from the blackboard or from your book. Look at the three figures on the left side of this page, figures B, C, and D. I would like you to draw shapes as much like these as you can across from them on the right side of the paper.

To the tester:

As the student works on this section, observe his/her method of operation. Does the student draw each line separately, as if it were not related to the other lines in the drawing? Does the student easily draw the outline of the figure and then painstakingly fill in the details? Does the student seem to have a need to twist or turn his/her head or the paper, or to trace over the original figure first? Note any such behaviors. This information can be included with other observations to determine whether or not the student has visual perception or coordination problems.

V. DISCRIMINATION

To the student:

"On this page there are four rows of letters, words, or pictures. One item in each row is different from the others in that row. Find the different one and draw a circle around it. Do not trace over the drawings."[2]

To the tester:

Watch for the same behaviors during this section of the test as were mentioned for other sections . If they occur, make a note of them.

VI. FIGURE - GROUND

To the student:

"There are seven drawings on this page - one at the top and six others below it. If you put three of the drawings from the bottom all together in one picture, it would look like the top picture. Which three are they? Put an x on the ones you select."

To the tester:

Students are not permitted to trace over the figures before marking their responses. If a student is unable to complete this section without tracing, have him/her go on to the next section.

VII. CLOZURE

To the student:

"Look at the figures and words down the right side of your paper. If one of the figures in the row to the left was completed, it would look just like the figure at the right end of that row. Without tracing the figures or connecting the lines, decide which of the drawings on the left would be just like the one on the right. Put an x on it. Don't worry about minor differences between the drawings."

To the tester:

As with previous sections of the test, note any difficulties the student has. If it is necessary for the student to trace the lines or to connect them, do not intervene. Just mark the response incorrect.

VIII. AUDITORY PERCEPTION, PARTS A, B, C, D

To the student:

"This section of MITOSA will let us know how well you can hear the separate sounds in words. In Parts A and B you will be listening for the beginning sounds of words. For example, dog begins with the sound /d/ and store begins with the sound /st/. I will say two words at a time. I want you to listen carefully to the words and tell me if they begin with the same sound or with different sounds. This is how it works: when I say run - sun , you say 'same' or 'different' , depending on what you think the beginning sounds were. 'Run - Sun'"(wait a few seconds for the student's response. If he/she is correct, say "Fine, now let's begin the test." If he/she is not correct, go over the example sound by sound until the student understands before beginning the test. If the student just cannot grasp the idea or cannot perceive the sounds, go on to Part C.)

PART C

"This next part will ask you to listen for the ending sounds of words. For example, sweet ends with the sound /t/, and heart ends with the sound /rt/. Again I will say two words at a time. Listen carefully to how the words end and tell me if the last sound of each word is the same or different. I'll let you try it first. Tooth - Hoof. Do they end with the same sound or with different sounds? (If the student answers correctly, begin this section of the test; if not, try to help the student understand what is wanted. If this is not possible, go on to Part D.) All right, I'll begin the test now."

PART D

"In Part D, you will have to pick out the middle, or vowel, sound of words. For example, the word plate has the middle sound /a/ and the word soap has the middle /o/. Listen carefully to the pairs of words I will say and tell me if the middle sounds are the same or different. It will work like this: Boat - Hope, are they the same or different? (Go through the same procedure as with Parts A, B, and C.) OK, now let's begin the testing. "

VIII. AUDITORY PERCEPTION - SEQUENTIAL MEMORY, PART E

To the student:

"This part of MITOSA will test your ability to remember information you have heard, such as directions, orders, or classroom lectures. Listen carefully to the sentences I will read, then say each one back to me. Try to say it exactly like I read it."

To the tester:

Read the sentences in a normal conversational tone at normal speaking speed. As the student repeats a sentence, follow along on the test page and put a slash through each area in which a mistake is made. Mistakes will include deleted words, extra words, incorrectly pronounced words (for example, endings dropped or added), or words said out of order. Each slash counts as one error. If the student asks you to repeat a sentence, you may do so, one time only. If the student asks you to repeat three or four of the sentences, make a note of the fact. At this point you don't know whether this is a sign of a hearing problem, a sequential memory problem, or poor attention.

VIII. AUDITORY PERCEPTION - SEQUENTIAL MEMORY, PART E CONTINUED

To the student:

"This section will tell us how well you can remember numbers in order. This ability is related to your ability to do math problems which have several steps, such as long division or addition of fractions. I will read some numbers to you. They will be similar to phone numbers, order numbers, or social security numbers. You are to listen closely as I read each number, and then say the number back to me exactly the same."

To the tester:

Read the numbers with normal stress at a normal speed. Do not repeat any of the numbers. Follow the student's responses on the test page, putting a slash through each place in which the student makes an error. An error will be: saying the wrong number, not saying a correct number, saying numbers out of order.

IX. WRITTEN LANGUAGE

To the student:

"This exercise will give me valuable information about how you express yourself in writing. Each item has part of a sentence, either the beginning or the ending. You are to write the missing part. Follow all the rules you can think of about writing. Tell me as much as you can about yourself in your answers. Be careful but complete. Now, just follow the directions on the test page."

To the tester:

Do not help the student with wording or spelling. Explain that the questions are to show what is in the student's head to start with. Allow about ten minutes for this section.

EVALUATING THE RESULTS OF MITOSA

(Michael's Informal Test Of Student Ability)

by

Thomas Michael Grafius

ANSWER KEY

I. List A: Primer
List B: Grade 1.0 to 1.9
List C: Grade 2.0 to 2.9
List D: Grade 3.0 to 3.9
List E: Grade 4.0 to 4.9
List F: Grade 5.0 to 5.9
List G: Grade 6.0 to 6.9
List H: Grade 7.0 to 7.9

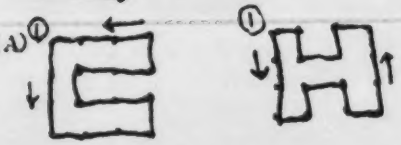
II.

1. = T	5 = T	9 = F	13 = F
2 = F	6 = F	10 = T	14 = T
3 = F	7 = T	11 = T	15 = F
4 = T	8 = F	12 = F	16 = F

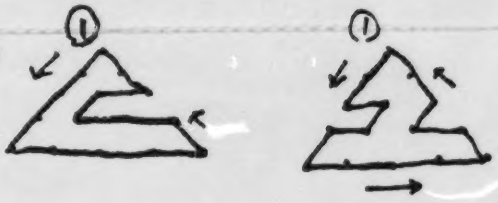
III. 1 = TRUE
2 = blackboard or chalkboard

3 =

4 = (A)



(B)



5 = Monday

6 =

1. a	19. burr (s)	37. gash
2. I	20. burg (s)	38. gush
3. is	21. shag	39. briar
4. as	22. shrug	40. garish
5. us	23. gas	41. ash
6. has	24. grab (s)	42. bash
7. rug (s)	25. garb (s)	43. bias
8. bug (s)	26. brag (s)	44. brash
9. bag (s)	27. brig (s)	45. sari
10. big	28. rub (s)	46. sub
11. hug (s)	29. rib (s)	47. bus
12. hag (s)	30. grub (s)	48. bursa
13. rag (s)	31. air	49. hub (s)
14. rig (s)	32. hair (s)	50. sugar *
15. sag	33. brush	
16. sir	34. rush	
17. bar (s)	35. bush	
18. gar (s)	36. rash	

* Other words are possible. This list is just a guide.

IV. This page must be assessed according to the guidelines in the following section, Evaluation of Student Responses.

V. A = 2 ; B = 3 ; C = 4 ; D = 1 .

VI. Drawings #2, #3, #6.

VII. A, B, B, C, A.

VIII. Must be assessed individually. See the following section.

IX. A: 1 = D, 2 = D, 3 = S, 4 = D, 5 = D, 6 = S.

B: 1 = D, 2 = S, 3 = D, 4 = D, 5 = D, 6 = S.

C: 1 = D, 2 = D, 3 = D, 4 = S, 5 = D, 6 = D, 7 = D, 8 = S.

D: 1 = S, 2 = D, 3 = S, 4 = D, 5 = D, 6 = D.

E: Must be repeated exactly as written and read. Minus 1 for every omission or mistake.

EVALUATION OF STUDENT RESPONSES

I. Word Lists

A student's instructional level would be the level of the first list in which the student misses one word.

A student's frustration level would be the level of the first list in which the student misses two or more words.

The term 'instructional level' means the point on a scale of reading difficulty where a student could read materials with satisfactory comprehension of their contents, and yet which included unfamiliar words that could be learned at a comfortable pace.

'Frustration level' is the point at which the student is no longer able to adequately comprehend the content of the materials due to the inclusion of too large a number of unfamiliar words.

Analysis of actual student responses can yield more revealing information. Some examples of the types of mistakes to watch for as clues to a student's learning problems are:

a. not pronouncing final consonants or suffixes.
b. substituting vowel sounds.
c. pronouncing initial and end sounds of words correctly, but giving a middle sound unrelated to the actual spelling of the word.

d. saying a synonym for a word on the list that is not at all related in spelling or pronunciation.

Examples:	Word from list	Student response
1.	farmer	family
2.	home	house
3.	same	some
4.	wouldn't	wonder
5.	speaking	speak
6.	look	see
7.	saw	was

As Part I of MITOSA, the Word Lists, is administered, it is sufficient for the tester to accurately note student responses on the Word List Check Sheet. If the student does have specific learning problems that mistakes on the word lists give indications of, this fact will be verified by the results of the visual or auditory perception sections of MITOSA or in the written language section. The connections will be explained throughout this evaluation guide.

II. Math Concepts and Symbols

This section is more diagnostic than definitive. It indicates whether or not a student understands the concepts of TRUE and FALSE, equality, addition, subtraction, multiplication, and division. It also indicates the student's understanding of the basic math symbols for each function.

Guessing on the student's part can result in some undeserved correct answers, but generally the errors will begin at the point where a student's knowledge and understanding becomes shakey. If you have any doubts about the validity of some of the student's answers, discuss them with the student after MITOSA has been completed. This can tell you how much the student really understands.

You may need to find out which types of math problems the student is able to do. In this case, you can write a few examples of each type of problem on a sheet of paper or on the chalkboard and ask the student to solve them. You could also use a published math diagnostic test, such as Steck-Vaughn's Working With Numbers Mastery Test. This would be done after and in addition to MITOSA.

III. General Thinking / Reasoning Ability

This section tests a student's ability to use various types of reasoning and logic to solve problems or puzzles. Although students would actually be on a continuum of ability levels, a guide to follow is:

a. Less than half of the questions (1 through 5) correct and fewer than eight words on #6 indicates that a student would probably

have difficulty with independent learning and the prognosis for forward progress would not be good.

b. More than half of the questions (1 through 5) correct and more than 10 words on #6 indicates an ability to learn independently or with a minimum of teacher involvement, and at least an average potential for progress.

As student scores get further away from the above mentioned mid-point, in either direction, the prognosis becomes more extreme, more favorable or unfavorable.

Note: Students with some visual perception problems will probably have difficulty with #1, #3, and #4. Likewise, students with language or auditory perception problems will probably have trouble with #2, #5, and #6. In these cases a low score on this section of the test may not be a sign of poor thinking or reasoning ability. Score and evaluate the remaining sections of MITOSA before forming an opinion about the student's problem solving ability.

Question 1: The prerequisite knowledge a student needs to have in order to answer this question includes: knowing the function of the signs + and = ; understanding spatial relationships; understanding the directions 'circle the correct answer' ; knowing the words TRUE and FALSE. A lack of any of these could lead to an incorrect answer. If you have any doubts about the student or his / her answer, ask the student to explain why he / she chose the answer marked.

Question 2: Whether the student or the teacher reads the question, the objective is to tell what would have the same relationship to chalk as pencil has to paper. In order to answer correctly the student needs to understand this functional relationship. The validity of an answer could be checked by having the student solve other analogous relationship questions.

Question 3: The student needs to understand the If - Then framework of the question as well as the symbols + and = and the spatial relationships between the sets of lines. The lines are located between the plus signs in positions equivalent to their positions in the completed figure. Finally, the student has to be able to visualize the separate lines merging into one figure, and then reproduce that figure on the paper. This means that various visual perception skills as well as the ability to solve the puzzle are put to the test.

Question 4: There are several possible solutions to these 'connect the dot' puzzles. It doesn't matter which solution a student uses as long as it is consistent with the directions given. This puzzle utilizes a student's reading comprehension ability, short-term sequential memory, spatial perception, and ability to follow directions accurately. If the student does not end back at the first dot, uses the same dot twice, or goes back over the same line, the answer does not count.

Question 5: This riddle involves a few different thinking skills, and some basic factual knowledge: names of the days of the week, initial consonant sounds, deductive reasoning, and the ability to look beyond the obvious. A student with less well developed reasoning skills would hear the days Tuesday and Wednesday for the first two statements and jump to the conclusion that the next day should be Thursday. A student who was able to go beyond this simple sequential pattern and detect the initial consonant sounds of T, T, T, T, and W, W, W, W, would then connect the following M,M,M,M set to the day Monday. This question will be difficult for a student with good thinking a bility but who has an auditory perception problem which interfers with hearing initial consonant sounds.

Question 6: In order to do well on this type of exercise, the student needs to be able to see or visualize the smaller words which could be made from the letters of the key word. This involves isolating groups of letters or mentally rearranging them in different orders or combinations - a fairly high level process. Students who do well on this section could be expected to do well in spelling as well as on the first five questions of this part. This is also a function of the student's own usable vocabulary.

IV. A. Eye-Hand Motor Coordination

As the title of this activity indicates, the student's response to this question will let you know how well he / she can coordinate what is seen with what the hand writes or draws. A person having trouble with this activity could also have trouble writing clearly or copying accurately. Such a student could print rather than write, or use a straight-edge to keep on a line. Avoid tasks that would require copying or rewriting material. Use consumable work sheets or workbooks. If writing is too great a problem, the student could do most work orally, or with a typewriter or in programmed and multiple choice books.

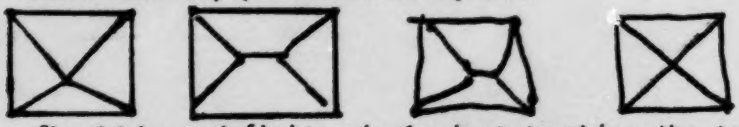
IV. B,C,D. Visual - Motor Integration

This section gives the tester an idea of the degree of integration between a student's visual perception and fine-motor skills. First the student must be able to 'see' the drawings accurately, and then must be able to copy them fairly accurately. The student has to follow closely the original size, shape, and configuration. This involves part/whole perception, directionality, fine-motor coordination, and discrimination.

As with the previous question, a person having trouble with this section will probably have some difficulty with writing or copying, getting information from the chalkboard, or rewriting work to be done. When it is necessary to have the student copy work, stress the importance of saying the material word by word or number by number as it is written. Use a finger to point to what is being copied or use an underliner. Go back over the material to make sure it has been copied accurately. If possible, use consumable materials, programmed books, or multiple choice activities.

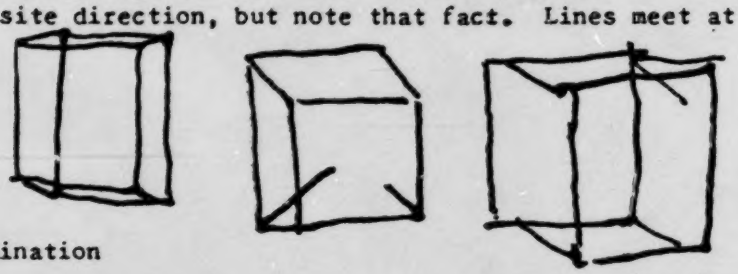
IV. B, C, D. Examples of Unacceptable Drawings:

B. Should be a square with corners meeting, center line horizontal, below half-way point inside square.



C. Should be a definite circle just touching the top of an elongated triangle.

D. Should look like a three-dimensional box. It may point in opposite direction, but note that fact. Lines meet at neat corners.



V. Discrimination

In order to make the correct answer choices on this page the student needs to be able to perceive the component elements of each drawing and determine which ones are different. There is only one correct answer for each row.

A student having difficulty with this page (one or more errors) may have trouble detecting the difference between similar letters or words. In the classroom poor visual discrimination skills could cause frequent errors during oral reading and apparent careless mistakes on tests and assignments. If the student is seeing the wrong numbers in math problems or the wrong words in questions, it will be difficult to give correct answers.

A student can overcome a minor problem in discrimination by using gimmicks: pointing to what is read, tracing over numbers or letters, practicing observation and discrimination skills. If the problem is severe, however, then it would be best to avoid such activities as well as fine print and closely spaced work.

VI. Figure - ground

This activity requires the student to pick out individual drawings that have been superimposed in a composite drawing. The student must be able to perceive the relevant shapes and lines within a drawing - the important details. This should be done without tracing over the drawings.

This section is related educationally to being able to pick out letters or letter groups from words, words from sentences, or digits from more complicated math problems. It would also relate to chart, graph, or map reading skills. One or more incorrect answers on this page would indicate problems in this area.

Methods you can use with students to help them compensate for a weakness in figure-ground perception include:

a. Using blank paper or file cards to cover those questions or math problems not being worked on;
b. Having the student use a finger or pencil to point to what is being read or worked on;
c. Having the student use a finger or pencil to trace details on maps, charts, or graphs.
d. Assigning work which is well-spaced on the page, even if some of it has to be rewritten.

VII. Clozure

This activity, as its name suggests, involves being able to visualize the continuation of the lines in partially completed figures to determine what the finished product would be, or closing the lines mentally. A student who has a weakness in this skill could exercise it by doing follow-the-dot activities, word or sentence completion lessons, crossword puzzles, or anagrams. Methods of compensation would include having the student use tracing paper over the exercise with the blank on which he/she could try various answers, or avoiding fill-in-the-blank activities altogether.

Answers to these five questions are either right or wrong. The student is not allowed to trace over the drawings.

VIII. Auditory perception

It is difficult to determine exactly when a language problem (mispronouncing words, spelling incorrectly, leaving out or adding sounds to words) is due to visual or to auditory misperceptions. Seeing and hearing are quite closely inter-related in the acquisition of language. Also, incorrect responses on the phonics section of this test could occur because the student had never been exposed to phonics training in school.

Some guidelines for evaluation of a student's responses are:

a. When a student consistently misses initial consonant or consonant blend sounds, this may indicate an auditory perception problem. The student may not be able to discriminate between similar sounds, or the student's brain may not perceive the differences. Further testing - commercial or self-made - can help determine if the problem involves all initial consonants or only certain ones.

b. Missing final consonants or blends may be due to the student not 'hearing' them (the brain not perceiving), or to a cultural/ethnic language pattern conflict. If the latter reason is responsible, the problem may be remediated with a lot of phonics drills and practice. If the problem is due to faulty perception, compensation techniques have to be used - going around the problem.

c. Missing vowel sounds, likewise, can be due to poor phonics training or to faulty perception. Poor training can be overcome, but faulty perceptions have to be worked around.

Compensation for auditory perception difficulties can include the following activities:

a. Sight learning and rote memorization
b. Learning words by families (-ame = fame, came, same, blame, etc.)
c. Using flashcards
d. Using tactile materials - letter blocks, cutouts, typewriters
e. Teaching by sound groups, word shapes

Auditory Sequencing, verbal:

This section requires the student to repeat sentences that the tester has read aloud. A student who has difficulty repeating the sentences correctly will probably have trouble learning from lecture-style teaching. The student could be expected to forget spoken directions or explanations. Details would be confused.

In order to compensate for this problem a student could take thorough notes in class, use a cassette recorder, or have the instructor make assignments in writing.

Auditory sequencing, numerical:

When a student has trouble with this section, it usually follows that he/she will have difficulty with multi-step math computations - long division, fractions, verbal problems. If this should prove to be the case, try writing the steps to doing the problems on a file card and have the student follow the same step by step procedure every time. Give much drill and practice at each step. For example, in learning to divide whole numbers have the student:

a. divide one digit into one digit., no remainder
b. divide one digit into two digits, no remainder
c. divide one digit into three digits, no remainder
d. divide one digit into three digits with a zero in answer, no remainder
e. divide one digit into one digit, with remainder
f. divide one digit into two digits, with remainder, etc.

When using this approach the student must overlearn each step to allow for forgetting, which seems to accompany many learning problems. Sometimes a student will understand a written explanation but not a verbal one. Sometimes the student with numerical sequencing problems will learn through using manipulatibles or machines (abacus, calculator, etc.) But sometimes nothing seems to work, in which case you teach the student to use existing math skills in as many practical situations as possible.

IX. Written Language

This section has three main values for the classroom teacher:

a. The content - what the student says in the answers - can give the teacher information about the student's goals, attitudes, and interests.
b. The grammatical structure of the answers can tell the teacher what elements of English the student can use correctly - capitalization, punctuation, sentence formation, spelling, word usage.
c. The teacher can determine the approximate writing grade level of the student by counting the total number of words in the answers (including those words given), dividing that into 100, and then multiplying the answer times the number of sentences and the number of syllables in the responses. Then Fry's Readability Scale can be used to find the grade level. Other similar measurement tools could be used. Expect the results to fall 1 or 2 gradelevels below the reading level. The same system can be used to determine the student's oral language level if the person is a non-writer and you write down his/her responses to the sentence beginnings or endings.

Summation:

MITOSA gives few definite, factual answers about a student. Its primary value is as an indicator of abilities and problems. This is what a teacher of adults needs to know. Practical questions like the following can be answered by administering MITOSA and correctly interpreting the results.

a. "On what level reading skills material should I start Mr. Johnson?"

b. "Sarah is having such a terrible time with fractions. Is there something special interferring with her learning in this area?"

c. "Harry only does part of what I tell him to do. Could he have a hearing problem?"

d. "Mrs. Fogleman wants to improve her writing. What skills does she already have?"

Interpretation of the test results is almost as much an art as a science. The more experience a teacher or counselor has in adult education or the better the tester knows the student being tested, the more valid their assessment will be. When a teacher has been working with an adult student for a period of time, certain subjective evaluations are bound to take place regarding that student's abilities or problems in particular areas. The results of MITOSA can verify or modify these subjective evaluations.

MITOSA can also be a relatively non-threatening way to assess ability levels and learning styles of new students. It can provide most of the information needed for designing an individual education plan. It can indicate whether or not there is a need for referral to a specialist for more in-depth testing or therapeutic help. Finally, the sentence completion page of MITOSA can provide useful information about a new student's attitudes, goals, likes and dislikes. At worst, the student's responses, whether true or false, sketchy or complete, can provide a basis for discussion which will help the teacher become better acquainted with the student.

The last point that has to be made is that MITOSA results must be viewed as a whole. Important clues and information will be lost if the test evaluator does not take into account the consistencies or inconsistencies between various sections of the test. Some of the factors that should be noted are:

a. The types of mistakes made in pronouncing words from the Word Lists can correlate with spelling mistakes made on the Written Language page. Both of these could be related to weaknesses in Discrimination or Figure-Ground perception.

b. Errors in Eye-Hand Motor Coordination and Visual Motor Integration (section IV) could be a reason for poor writing on the sentence completion page. Examples of poor writing are unevenly spaced letters or words, crooked lines, incorrectly formed letters.

c. Close misses on the mispronounced words from the Word Lists or seemingly illogical answers on the sentence completion page can be due to a problem in discrimination. The exact spelling of a word may be missed or the supplied portion of the sentence may be misread.

d. Difficulty with verbal sequencing section (part VIII) could coincide with an inability to accurately follow the instructions for numbers four and five on part III (Thinking/Reasoning).

There are other relationships between perceptual problems and performance errors that experience will help you to be more aware of. For additional information and ideas it would be helpful to read some of the suggested materials in the attached bibliography.

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Learning Disabilities, by McCartny, James J. and Joan P.; Allyn and Bacon; Boston; 1973.

Learning Disabilities: Diagnostic - Prescriptive Instruments; A manual of diagnostic procedures for teachers and therapists.; R.E. Valett; Lear Siegler, Inc.; Fearon Publishers, 6 Davis Drive, Belmont, CA 94002.

The London Procedure: Adult Learning Problems,;Revised ; Laura Peltz Weisel; A screening, diagnostic, and teaching guide ; Information on obtaining the material can be furnished by Ohio State University.

The Remediation of Learning Disabilities, Second Edition ; Robert E. Valett; A handbook of psychoeducational resource programs; distributed by Consulting Psychologists Press, Inc., 577 College Ave., Palo Alto, CA, 94306.

MICHAEL'S INFORMAL TEST OF STUDENT ABILITY

(MITOSA)

Test Pages I through X

Thomas Michael Grafius
State Correctional Institution
Muncy, Pennsylvania 17756

I. Word Lists

A	B
1. not	6. friend
2. bus	7. school
3. go	8. woman
4. in	9. push
5. pass	10. keep

C	D
11. sale	16. lever
12. family	17. danger
13. dollar	18. closed
14. adults	19. express
15. exit	20. restrooms

E	F
21. hospital	26. examples
22. gasoline	27. government
23. nation	28. natural
24. slippery	29. religion
25. detour	30. punishment

G	H
31. medicine	36. commercially
32. future	37. standardized
33. accidental	38. environmental
34. knowledge	39. prohibited
35. construction	40. intoxicating

II. Math Concepts and Symbols

MITOSA

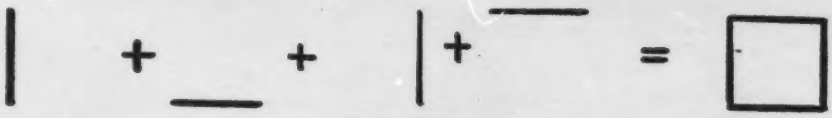
Directions: If the symbols show something that is true, put T on the line in front of the number. If they show something false, put an F on the line.

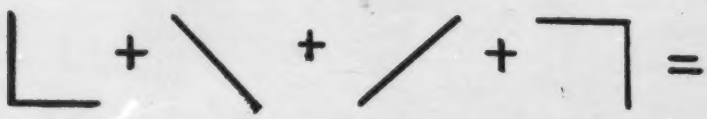
___ 1.	___ 9. ΔΔΔΔ−Δ = ΔΔ / ΔΔ
___ 2. O =	___ 10. 9 − 5 = 4
___ 3. < O	___ 11. OOOXOOO = OOO / OOO / OOO
___ 4. 10 < 20	___ 12. 3 x 4 = 7
___ 5. > Δ	___ 13. OOOO / OOOO ÷ OO = OOO / OOO
___ 6. 36 > 63	___ 14. 10 ÷ 2 = 5
___ 7. O+O+OO=OOOO	___ 15. $2\overline{)6}$ 4
___ 8. 3+2+1=7	___ 16. $\frac{1}{2}$ =

III. REASONING - THINKING SKILLS

1. TRUE FALSE

2. Pencil is to paper as chalk is to _____.

3. If  ,

then 

4. Beginning on dot number 1, draw a line connecting all the dots and return to the first dot. Do not lift the pencil point, do not retrace or cross lines.

A.

B.

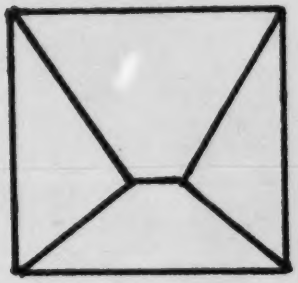
5. If Tammy bought a tank top on Tuesday and Wilma bought some white wine on Wednesday, when did Mona buy a mean monkey? _____

6. Make as many words as you can out of the word Harrisburg. Use only these letters. Use a letter only as many times as it is in this word. Write on another sheet of paper.

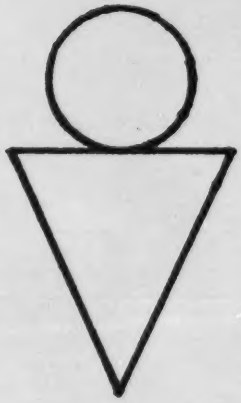
IV. Visual Perception, Parts A, B

A. Eye-Hand Motor Coordination:

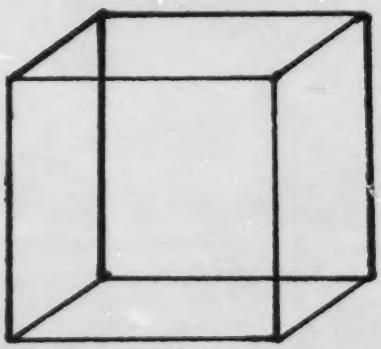
B. Visual Motor Integration:



C.

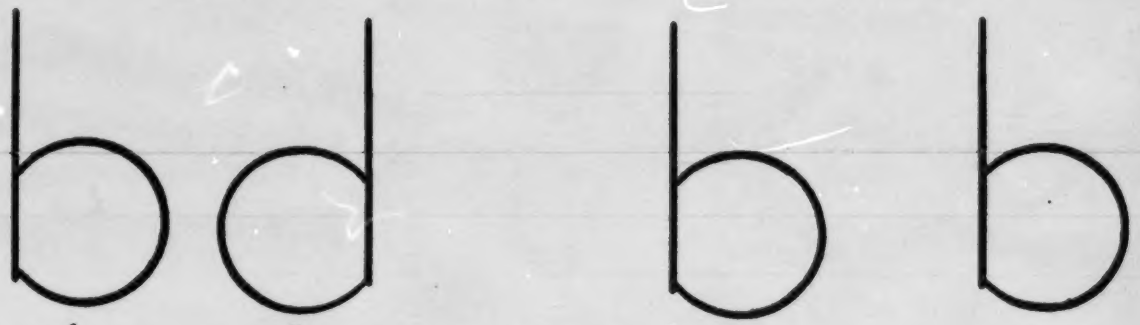


D.

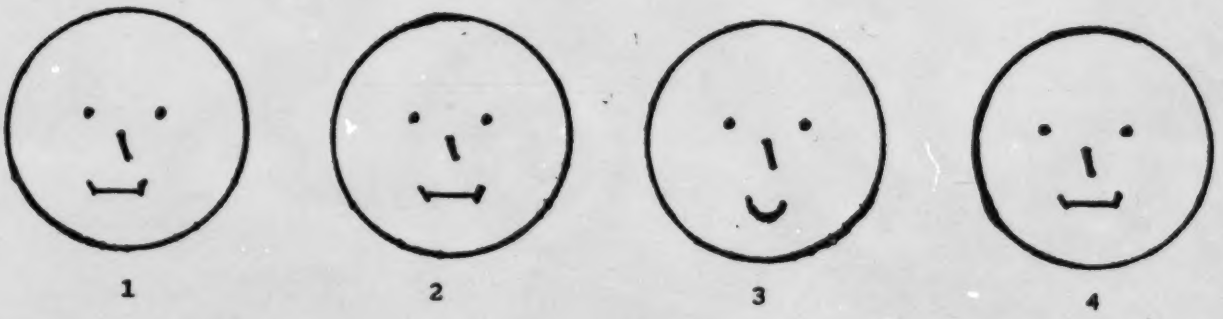


V. Visual Perception, Discrimination

A.



B.



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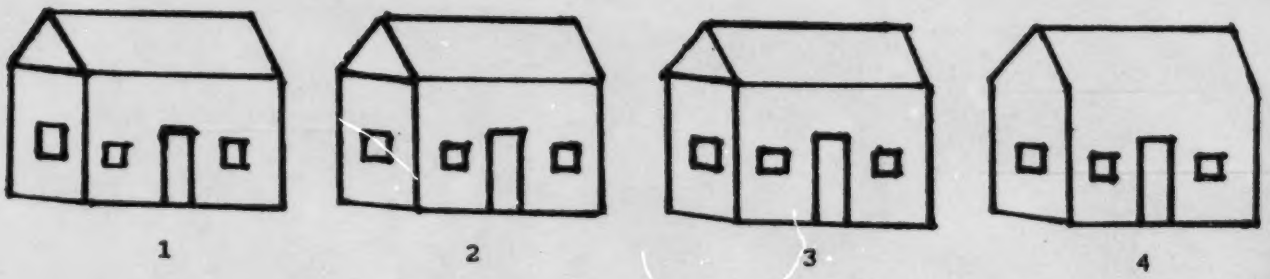

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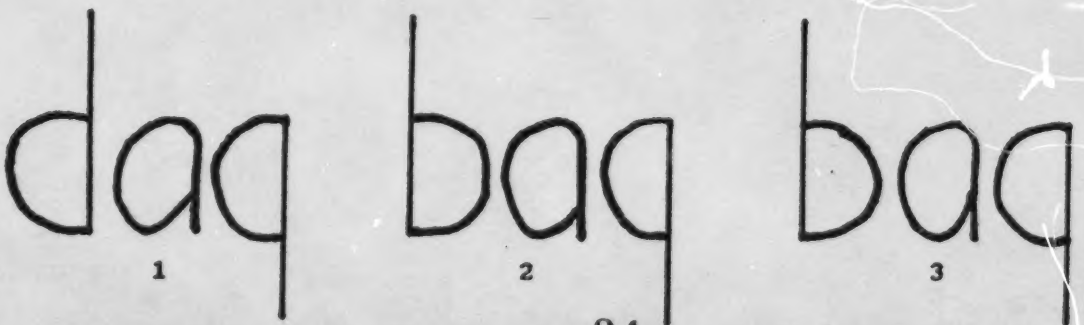
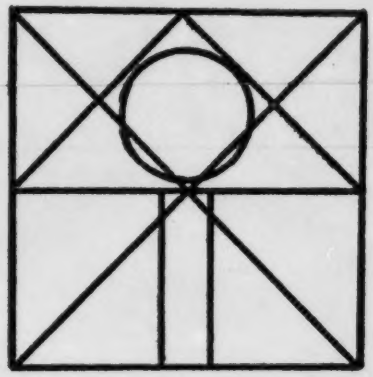
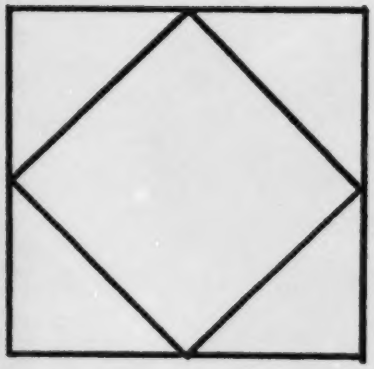


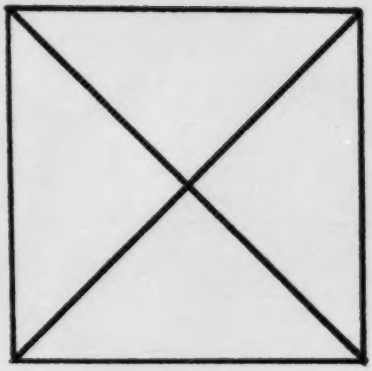
VI. VISUAL PERCEPTION - FIGURE /GROUND

Directions: Three of the drawings from the bottom part of the page have been combined in the drawing at the top. Put an X on those drawings.





1



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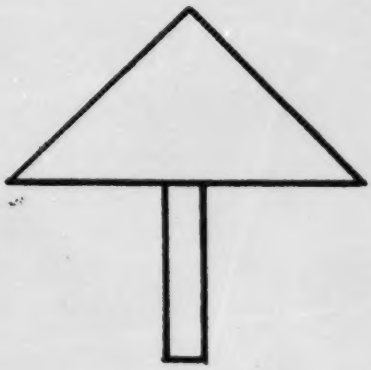

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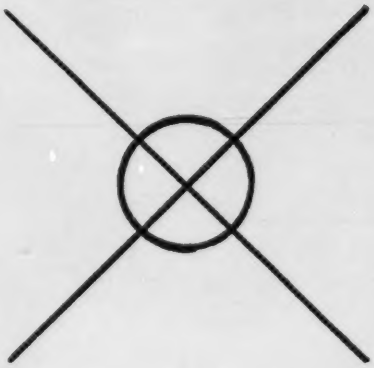
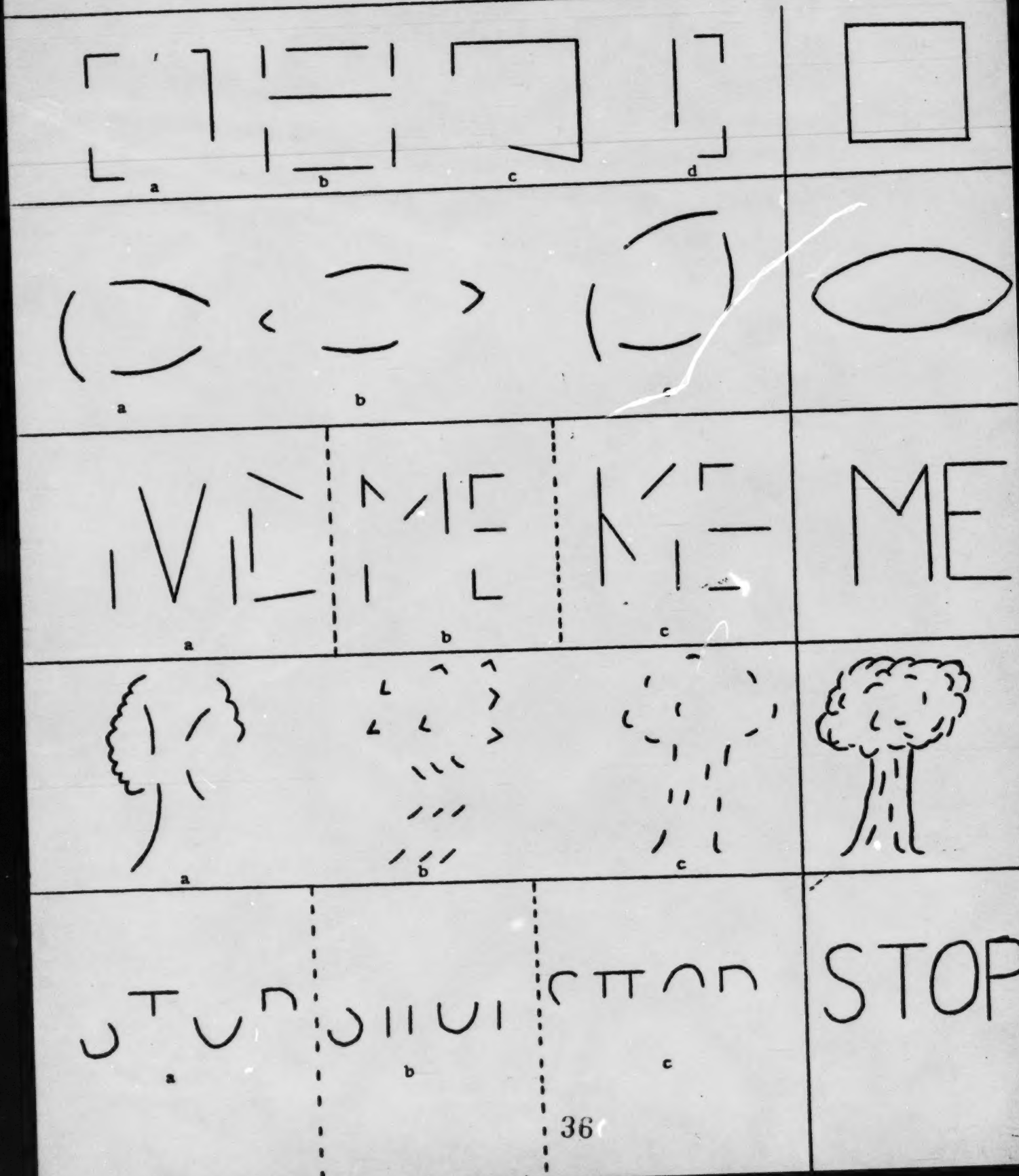


5.

6.

VII. VISUAL PERCEPTION, CLOZURE



IX. WRITTEN LANGUAGE

Directions: Complete the following sentences. Tell about yourself.

1. I like to

2. I used to live

3.

with my family.

4. When I leave _____, I

5. I don't like it when

VIII. AUDITORY PERCEPTION AND SEQUENCING

A. Tell me if these pairs of words begin with the same sound or different sounds.

1. bed - dead _____ 2. sis - this _____ 3. map - meet _____

4. final - vinyl _____ 5. rate - wet _____ 6. tacks - ton _____

B. Tell me if these pairs of words begin with the same or different sounds.

1. stop - tops _____ 2. chop - shop _____ 3. bride - blind _____

4. grab - glad _____ 5. fly - flight _____ 6. slip - slick _____

C. Tell me if these pairs of words end with the same or different sounds.

1. mush - much _____ 2. Myth - miss _____ 3. picks - hits _____

4. card - herd _____ 5. hill - field _____ 6. mean - steam _____

7. truth - proof _____ 8. rest - trust _____

D. Listen closely to the middle sounds (vowels) of the two words I say. Tell me if those vowel sounds are alike or different.

1. hide - climb _____ 2. bait - let _____ 3. rust-enough _____

4. cut - hot _____ 5. cat - fed _____ 6. knit - meet _____

E. Repeat these sentences exactly as I say them. Listen closely.

1. Jack mailed the three letters yesterday.

2. The busy workers left their briefcases in the office today.

3. After cleaning out her desk, Mary said good-bye and walked quickly outside.

F. Repeat these numbers as exactly as you can. Listen closely.

1. 654 - 3856

2. 264 - 35 - 6958

3. 88347

X. WORD LIST CHECK SHEET

1.	6.
2.	7.
3.	8.
4.	9.
5.	10.
11.	16.
12.	17.
13.	18.
14.	19.
15.	20.
21.	26.
22.	27.
23.	28.
24.	29.
25.	30.
31.	36.
32.	37.
33.	38.
34.	39.
35.	40.

Evaluation sheet for MITOSA*

| | TEST SECTIONS: | | |